

Environmental Education in Bangladesh and Japan: A Comparative Assessment

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CHOWDHURY Mahbubul Alam**

Abstract

バングラデシュにおける環境教育は、初等教育から高等教育まで特にフォーマル学校や神学校 (Madrasa) にて行っている。しかし、バングラデシュの環境悪化の問題が完全に政府主導となっていることは深刻である。バングラデシュの環境を保護するために、広範な大衆運動を始める必要がある。環境教育にも沢山問題がある。近年、環境マネジメントに対する政府は環境問題に気づいていることと廃棄修理に力を入れている。本稿では、バングラデシュの環境教育状況、主要な問題（特にカリキュラム）を取り上げ、日本の環境教育とくに初等教育レベルの比較的分析し、日本の環境教育の経験を導入より、バングラデシュの環境教育の問題を解決する試みである。

1. Introduction

The United Nations Conference on Human Environment held in Stockholm in 1972 allowed the world's communities to recognize the importance of environmental education, preservation of environment, as well as balanced development. Since then, environmental education has significant agendas on both local and international communities. In additions, the World Summit in 2002, the United Nations designated the period 2005 to 2014 as the decade of "Education for Sustainable Development" in Johannesburg, South Africa. To achieve sustainable development, it is necessary to change people's ecological, economic and social perceptions. The challenge that countries around the world therefore face is to integrate the concept of sustainable development in their education processes.

However, Environmental education (EE) provides the necessary knowledge, awareness, values and skills needed by citizens, as well as decision makers to understand the complexities of the environment. Bangladesh is one of the world's least developed country (LDC) and it has expressed at the development planning level has undertaken a number of measures to control hazards of development activities, and ensure a healthy environment of the country. This paper is intended to explore the EE which is one of the tools that help to achieve environment problems and sustainable development. Through the process of EE, individuals obtain an understanding of the concepts of and knowledge about the environment.

The main purpose of the study is to find out the EE problems of Bangladesh and their solution through the adoption of Japanese experience of EE. For this reason, it is necessary to understand the environmental problem of both countries. But considering constraints, like distance between Japan and Bangladesh, linguistic differences, resources and time, it was (is) decided to undertake the study mainly on the empirical studies conducted in research papers, surveys of research and government documents, and interviews with primary

school students in both countries. In addition some international organizations including the World Bank (WB), Asian Development Bank (ADB), United Nations Development Program (UNDP), United Nations World Conference on Education (UNWCE), United Nations Children Education Fund (UNICEF) of analyzing data. Section two, attempts a brief recapitulation of education system and EE in Japan, section three provides educational system and EE in Bangladesh, section four discusses the lessons learned from the comparison, and I end with my conclusion in the finally section.

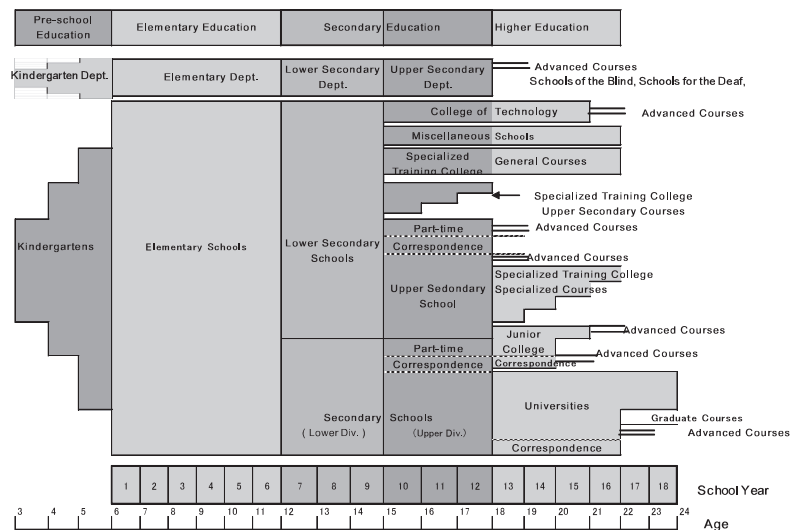
2. A Brief Recapitulation of Educational System and EE in Japan

Japan has one of the world's best-educated populations, with 100 percent enrollment in compulsory grades and zero illiteracy. The government abolished the prefectural schools, country schools (*gogakko*), *terakoya* and private schools (*shijuku*) with the enforcement of the modern educational system started in 1872 modeled after the French school system which began in April. The government had promulgated of the Education Ordinance in 1872. Within a few years after the promulgation of the Education Ordinance, more than 23,000 elementary schools were established. However, achieving an increase in the enrollment was not an easy task for a number of reasons, these are, the costs of establishing and maintaining the school as well as running costs were borne by the beneficiaries; school attendance meant the loss of that child to the family labor force; and the contents of elementary school education were far removed from the reality of working people's daily lives. The achievement of enrollment rate for compulsory education was no higher than 28.1 percent in 1873. Under these circumstances, the Ministry of Education implemented scholarship as something to be achieved by completing one stage at a time, so they put a lot of emphasis on elementary schools, since these constituted the first stage. And in order to explain to local people the significance and the necessity of getting children to attend school, easily understandable interpretations of the content of the Education Ordinance were added when it was promulgated at local government level. Vis-à-vis, various efforts were made by the government and the people working together to increase enrollment and attendance, and as a result, the figure of 90 percent enrollment rate for the whole country was reached by 1902, and by the end of the Meiji era, virtually all children of school age were attending elementary school. Furthermore, it had risen to the high figure of 98.2 percent in 1912. Subsequently, this figure did not show any great change, and by the time of the first large-scale postwar education survey in 1952 had reached the figure of 99.7 percent (JICA [2004] p.115).

The Japanese educational system was reformed by the Japanese government after World War II. The current system was established in 1947. The duration of old 6-5-3-3 system was changed to a 6-3-3-4 system (six years elementary school, three years junior high school, three years senior high school and four years university) (**Figure 1**). The compulsory education (*Gimukyoiku*) for all children provides free tuition fees and books, upto nine years, six years in elementary school (*shougakkou*) and three year in junior high school (*chuugakkou*). The educational system in Japan is run by the government on three different levels: national, prefectural, and municipal. The national level is composed of the Ministry of Education, Science and Culture (MEXT: *Monbukagakusho*). It is responsible for funding, curricula, textbooks, and deciding the standards of the schools. The Courses of Study by the Ministry of Education presents the national standards for classes, including the

objectives and contents for each subject. There are 47 prefectures made up of 5 member boards chosen by the governor. These boards have control over the public schools under their supervision, hiring teachers and licensing schools. The municipal level operates the schools, helping the prefectures with hiring and firing of teachers and also deciding on textbooks for the school. All of the funding to run the schools in Japan comes from the government, making public education free to all children (MEXT Website). The compulsory education system has been controlled by MEXT. MEXT supervises all aspects of education from pre-school (kindergarten) through upper secondary school and tertiary education in both the public and private sectors (**table 1**). At the regional level, each prefecture or major urban district has its own board of education. Historically, MEXT has renewed the national curriculum standards regularly at a pace of about once in every ten years. The National Curriculum Standards were first prescribed in 1947.

Figure 1: Organization Education System in Japan



Source: Ministry of Education Japan, <http://www.mext.go.jp/>

Table 1. Student Enrollment from Kindergarten to Junior College in 2009 in Japan

Management		Kinder- garten	Elementary	Junior High	High School	Junior College	Others*	Total
Public	Institutions	49	74	75	16	2	104	417
	Students	6,315	45,507	32,460	8,815	3	58,375	773,954
Local Govt.	Institutions	5,206	21,974	10,044	3846	26	1002	42404
	Students	306,015	6,939,922	3,308,105	2,340,653	9,973	128,822	13,198,189
Private	Institutions	8,261	210	745	1321	378	30	16,196
	Students	1,318,006	78,177	259,758	997,843	151,000	9768	5,633,138

Note * others (including Diploma High School, Special School)

Source: Ministry of Education Japan, <http://www.mext.go.jp/>

Recently, MEXT proclaimed seventh National Curriculum Standards Reform¹⁾ after Second World War. The following points related to the curriculum reform were included in the advice (UNESCO statistical yearbook, 1999).

- *Emphasis on intermixed educational curriculums for study majors*
- *Emphasis on skills for taking advantage of knowledge and information and a movement from teaching knowledge to children to teaching how to learn.*
- *Emphasis on lessening the study content and decreasing the number of class hours, and increasing the optional course opportunities, children's free activities, self-learning, and self awareness.*
- *Taking more advantage of active education methods with more emphasis on critical thinking development, problem-solving skills, memory role reduction, and increase in project-based learning.*
- *Paying more attention to the students' individual needs, differences, and abilities in schools.*
- *Using the capabilities of the World Wide Web in the teaching-learning process and long-distance trainings based on this network.*
- *Providing security for the students on the World Wide Web.*
- *Training professional teachers that fit the modern information and communication technology transformations.*
- *Paying more attention to students' moral development, life skills, social responsibility, and human relationship skills.*

This report with the set axis was placed as the basis for the education curriculum modifications of the ministry of education. The courses of study in order to establish a same level of education nationwide and guarantee equal opportunity for learning in school. In this Curriculum Standards Reform MEXT introduced New Courses of Study, like "Period of Integrated Study" which has been implemented in elementary, junior and high schools from 2002. The integrated study period have 105 to 110 hours every year (average three hours a week) in primary school. It has also emphasis on environment content that is positioned in each subject such as social studies and science.

In addition MEXT has implemented a number of reforms for compulsory education, "Action Plan for Improving Academic Ability", a specific response to the perceived decline of the academic (ability in math, science, and literacy) in comparison to other industrialized nations. To solve these problems MEXT implied "Gakushu Shido Yoryo" (Courses of Study) essentially a handbook for education that provides specific guidance to schools. These guidance made on based of previous decade of experience with "yutori kyoiku" (relaxed education), and significant data has been collected since the implementation of standardized testing in 2007. The main purpose was to reduce education stress and to introduce relaxed classes called rest periods, implemented in April 2011 represents a significant modification of the 2002 reforms. (Robert Fish, Website).

2.1. Primary Education

The Japanese, education has important goals for acquisition of academic knowledge, intellectual growth, or vocational skills. As mentioned before, MEXT defines the elementary school curricula and makes it uniform throughout the country, thus all students in same grade are studying the same subjects and contexts (**table 2**).

The following subjects are included in the national curriculum: Japanese language, social studies, arithmetic, science, life environmental studies, music, arts and craft, physical education and homemaking studies. In addition, there is an hour a week of moral education as well as extracurricular activities. The most important part of the curriculum, on the elementary level, is reading and writing. Special education schools (schools for the deaf, schools for the blind, schools for the other disabled) provide physically or mentally disabled children with thorough and meticulous education, taking into consideration the type and degree of each child's disability. (<http://www.asianinfo.org>).

The size of elementary classes are thirty-one students per class on average, but higher numbers are permitted. Students are usually organized into small work groups, which have both academic and disciplinary functions. Discipline also maintained, and a sense of responsibility encouraged, by the use of student monitors, having the students assume responsibility for the physical appearance of their classroom and school. Except for the lower grades of elementary school, it is usual to average 6 hours of school a day on weekdays, one of the longest school days in the world. Even after school lets out, the children have drills and other homework to keep them busy. Vacations are 6 weeks in the summer and about 2 weeks each for winter and spring breaks. There is often homework over these vacations. Teachers are generally responsible for all subjects, and classes remain in one room for most activities. Teachers are well prepared for classes. Most teachers are women, and most principals and head teachers are men. Teacher students ratio is 1:18.5 in elementary school.

Table 2. Standard number of yearly school hours in primary schools in Japan

Grade	A	B	C	D	E	F	G	H	I	J	K	L	Total
1st	272	-	114	-	102	68	68	-	90	-	34	34	782
2nd	280	-	155	-	102	70	70	-	90	-	35	35	840
3rd	235	85	150	70	-	60	60	-	90	105	35	35	910
4th	235	85	150	90	-	60	60	-	90	105	35	35	945
5th	180	90	150	95	-	50	50	60	90	110	35	35	945
6th	175	100	150	95	-	50	50	55	90	110	35	35	945

Note: Numbers of lessons for one school year :one lesson unit is 45 minutes., A Japanese Language (Kokugo), B. Social Studies (Shakai), C. Math (Sansuu), D. Science (Rika), E. Life Activities (Seikatsu), F. Music (Ongaku), G. Art (Zugakousaku), H. Home Economics (Katei), I. Physical Education (Tai-iku), J. General Studies (Sougou), K. Moral Education (Doutoku), L. Special Activities (Tokubetsu Katsudou)
Source: Ministry of Education Japan, <http://www.mext.go.jp/>

2.2. Environmental Education

The elementary education in Japan provides all children with a high quality, well-balanced basic education in the EE, science, music, and art through nine years of compulsory schooling. The structure of teaching subjects in elementary school has been almost the same from first grade. "Life environment studies" is a new subject introduced first in the present standards by combining social studies and science, which are taught in first and second grades. EE adopts an integrated approach to the environment, both natural and human-made, and promotes a holistic, dynamic and interactive view of its biological, physical, social, economic, technological

and cultural components. EE at the school level should orient and develop students' perceptions and values as well as encourage their active participation toward environmental protection and conservation.

MEXT recent efforts reflect its intentions to integrate environmental awareness programs into all sectors of education. It aims to introduce students to local issues within their community by taking them out of the classroom i.e., fieldwork, meet with local NGOs.

3. Educational System and EE in Bangladesh

The education system of Bangladesh may be broadly divided into three stages the Primary, Secondary and Tertiary. Primary education is imparted in primary school, secondary education in high school and intermediate colleges, and tertiary²⁾ education in bachelor degree colleges and universities. The duration of education system in Bangladesh is 5-5-2-4 system, which means five years of elementary, five years of secondary, two years of higher secondary and four years of tertiary. There are about 2,500 Kindergartens, 80,397 primary schools, 18,500 secondary schools, 10 cadet colleges, 3,150 general colleges and 26 public and 56 private universities. There are 115 institutions offering technical and vocational education of different types and at different levels. The number of government medical colleges is 13 and that of private medical colleges is five. In addition, there are 24 Homeopathic and 68 teacher training institutions of different categories. The education system has been controlled by 'board of education'³⁾ under the Ministry of Education (MOE). School textbooks are published by the ministry of education through Text Book Board of Dhaka department. The entire country follows the same curriculum. Ability to read and write is a great asset in Bangladesh and possesses a multiplier effect, in that, it helps in better understanding of life, environment problems, efficient use of modern methods of cultivation, effective family planning, and growth of children. In 1971, independent Bangladesh inherited an outdated education system developed by previous rulers to suit their own socio-economic and political needs. Bangladesh have formed eight education commissions⁴⁾ since 1971. Recently, the new education policy 2010 has declared which are as follows: (MOE Website);

to extended the level of primary education from class V to class VIII and free education; secondary education from class IX up to class XII; at the end of class X, a terminal examination will be held at upazila, (sub-districts, or subdivisions found in some Western countries. Sub-districts which called Thana or Upazila) municipality and thana level; all students would be able to study their respective religions as well as moral education. Religion will be studied at the ebtedayee (part of Islamic religious education) level in madrasah (Islamic religious education) along with compulsory subjects like Bangla, English, moral education.

The major targets formulated into concern to development program laid emphasis on the eradication of illiteracy⁵⁾, introduction of universal primary education and informal education for drop-outs and environment education. As a result the primary education has recorded impressive progress in expanding basic and elementary education.

3.1. Primary Education

Bangladesh has one of the largest primary education systems in the world with an estimated 16.4 million primary school aged children (6 to 10 years). There are 365,925 primary school teachers (approximately 53 percent of teachers and 23 percent of head teachers are women), working in more than eighty thousand schools (**table 3**) (with ten different types of schools, including *Madrasahs*)⁶⁾. Basic education in Bangladesh is delivered through two systems; the formal system and the non-formal system. The existing Strategic Framework of Basic Education in Bangladesh has consummated adequately government policies for attaining maximum benefit out of public and private endeavors, both in the formal and informal systems. The formal system is the predominant one, while the non-formal system is complementary and supplementary to it. The Primary Education Compulsory Act passed in 1990 made primary education free and compulsory for all children up to Grade five⁷⁾. For each grade an annual examination is held subject wise and each students has to pass in all the subjects to get promotion to the next higher grade. Each institution conducts examination as per prescribed course and syllabus. There is a public examination at the end of grade five under the board of education. The board of education issues school graduation certificates to successful students. In addition, there is a system of scholarship examination at the end of grade five. Each institution selects its best students to appear in this examination which is conducted by the *Upazilla*⁸⁾ education officer. Merit scholarships are awarded by the government to successful students. Academic year begins in January and ends in December.

Table 3: The primary education institutional setup in Bangladesh is complex, as a formal and a non-formal school in 2008.

Types of Institution	Number of schools	Number of teachers	Number of students
Government primary schools (GPS)	37,672	182,899	9,537,571
Registered non-government primary schools (RNGPS)	20,083	76,875	3,472,799
Experimental schools	54	221	10,346
Community schools	3,263	8,772	388,051
Non-registered non-government primary schools	966	2,460	99,564
Kindergarten	2,987	16,980	226,187
NGO schools	408	763	25,872
Primary sections of secondary schools	1,139	13,021	270,790
Ebtedayee madrasahs	6,726	28,227	919,065
Primary sections of dakhil, alim, fazil and kamil madrasahs	8,920	35,707	1,051,360
Total	82,218	365,925	16,001,605

Source: GOB Directorate of Primary Education (2010) *Bangladesh Primary Education Annual Sector Performance Report 2009*, p.8. (<http://www.dpe.gov.bd/>)

3.1.1. Non-Formal Education

Non-formal Education is an important subsector of the Education Sector in Bangladesh. Non-Formal Education is defined as : “That form of education which consists of mostly assortment of organized and semi-organized educational activities operating outside the regular structure and routines of formal system, aimed

at serving a great variety of learning needs of different sub-groups of population, both young and old”. Non-formal Education consist of a series of projects under the direct control of Directorate of Non-formal Education. According to Primary and Mass Education Department, the Non-formal Education system caters to: "Those children who can not or do not get enrolled in primary schools, those who dropout from schools, the adolescents who relapse into illiteracy or those young and adult people who have never benefited from any schooling".(MOE Website).

3.1.2. *Madrasah Education*

Madrasah education system is a formal one, in addition to the general education stream, and consists of a well established Islamic religion based education stream. It was officially introduced in 1882 following the Hunter Education Commission Report. There are also a number of institutions for special type of education, such as 239 *Sanskrit and Pali Tols*, 8231 *Ebtedayee*⁹⁾ *Madrasahs*, and 78,821 mosque based schools devoted to early years of religious teachings. One of the aims of education is to establish human, cultural and social values in every tier and sphere of individual and national life. Religious and moral education is one of the ways of achieving this aim. The followers of every religion of the country have the right to learn the main subjects of their respective religions, acquire knowledge about rituals and ceremonies of their respective religion.

3.2. *Environment Education (EE)*

The environmental education has largely been taught in the country since elementary school. However curriculum system is not enough in the education. Recently there has been a new discourse to include EE in all level education policy. The Bangladesh government has several policy statements advocating widespread environmental education, but there has never been a specific government policy for environmental education nor environmental professions in Bangladesh. The Fourth Five Year Plan for Bangladesh (1996) states that “Environmental Education would be imparted to the teachers and students at all levels of education and specific measures must be undertaken to ensure participation of women at every level of education.” The national policy on education (1992) of Bangladesh states that protection of environment is a value which, along with certain other values, must form a integral part the curriculum all stages of education. Environmental studies has introduced in higher education after a couple of decades from the inception of environmental studies in primary level. Besides many governmental and non-governmental organizations, semiautonomous & autonomous institutions were playing different role in providing the environmental education. Government has also made different policies, rules & regulations for in building awareness of environmental education in rural and urban people through Ministry of Environment and Forest, Department of Environment, different other connected wings related to environmental issues . (Environmental Act 1992 & 1995)The Policy, contains the following specific statements on environmental education and public awareness:

- *Eradicate illiteracy and create widespread mass awareness regarding protection of the environment and utilization of all national resources in a sustainable and environmentally sound manner.*
- *Ensure inclusion and dissemination of environmental knowledge and information in the formal and non-formal systems of education and the media.*

- *Encourage spontaneous and active participation of people in all environmental activities. concerns and commence tackling them with the resources available, while also developing an effective, long term education and public awareness strategy. Employees including industrial and commercial workers.*
- *Encourage necessary research and evolve technology so as to ensure long term, sustainable and environmentally sound utilization of all resources.*
- *Ensure that environmental issues get due consideration in all research activities by research and development institutions.*

The aim of reform initiatives should target reducing illiteracy in a pragmatic way. Otherwise, the policy will remain as only prescribed documents like earlier ones, sounds rhetoric, rather implemented. What is lacking in current government policy are clear goals and strategies for environmental education.

In non-formal settings, various government organizations and NGO's¹⁰⁾ are involved in implementing EE in all the states of Bangladesh. One of strengths of Bangladesh's environmental movements is the vast network of NGOs. NGO's working in the EE field produce and apply their own educational material for their own projects without consultation, for the most part, with the Ministry of Education. In terms of formal education, the Ministry of Education has played an important role through its effort to develop a curriculum for EE and implementing various teaching and learning strategies to enhance awareness and internalize values on the importance of environmental protection in all schools. In line with the National Education Policy, 'Environmental Education across the Curriculum' has been introduced in both primary and secondary schools since 1998. EE is not taught as a single subject but is taught across the subject board and integrated in each subject from Mathematics to Religious Studies.

An integrated subject called Environmental Studies was been introduced into the primary and junior secondary syllabus in 1978. The syllabus of Environmental Studies for grade three (table 4), includes the causes and effects of degradation of the environment, the importance and methods of conservation, prevention of waste and pollution and conservation of water resources (Sharafuddin, 1990). The teaching subjects in primary level include Bangla (mother tongue), Mathematics, English for Today, Social Science, General Science, Religious Studies, has introduced in grade three. The main principles for framing the Environmental Studies syllabus for Primary School are know their immediate environment and develop a scientific attitude in solving their everyday problems; Study of separate subjects like biology, physics, chemistry, geography, geology, social studies, etc does not help young pupils understand the wholeness of the environment, so an integrated subject is very important; and Knowledge about proper use of environmental resources and of their conservation is essential for the maintenance of human life and civilization.(Md. Salequzzaman 2003 : 70-82).

Table 4: Environment education in the formal curricula of primary School in Bangladesh

Grade	Book	Chapter	Curricula Subjects
I	No	No	Bangla, Mathematics, English for Today
II	No	No	Bangla, Mathematics, English for Today
III	Introduction to Environment (Sociology)	Chapter 1: Our Environment: Environment Pollution	Bangla, Mathematics, English for Today, Social Science, General Science, Islamic Studies, Hindu Religious Studies, Buddhist Religious Studies, Christian Religious Studies
IV	Introduction to Environment (Sociology)	N/A	Bangla, Mathematics, English for Today, Social Science, General Science, Islamic Studies, Hindu Religious Studies, Buddhist Religious Studies, Christian Religious Studies
V	Introduction to Environment (Sociology)	Chapter 9: Environment Preservation	Bangla, Mathematics, English for Today, Social Science, General Science, Islamic Studies, Hindu Religious Studies, Buddhist Religious Studies, Christian Religious Studies

Source: Tapas Ranjan Chakraborty and A Atiq Rahman “Education for Waste Management in Bangladesh” <http://www.cceindia.org/esf/download/paper16.pdf>

3. 3. Recapitulate of Some Education Problems

The primary education sector in Bangladesh has undergone huge changes since the 1990s. The reason for these changes is the government’s commitment and extensive effort towards achieving Education for All (EFA), a declaration made at the World Conference on Education for All in March 1990 in Jomtien, Thailand. In the year 2000, United Nations declared eight Millennium Development Goals (MDGs) and education is one of them. As a result of these commitments, the access to primary education has increased steadily over the last two decades.

It has clarified various issues concerning education and EE in Bangladesh. Despite the government’s initiatives to respond to the effects of EE, there is still a lack of coordination among the concerned bodies to adopt its policy and implementation of plans. High student-teacher ratios increasing over time due to surge in enrolment; over crowding of class rooms; and poor motivation of teachers burdened with many non-academic and non school responsibilities assigned to them encroaching upon their limited school hours are some of the recognized causes of poor quality of primary education in Bangladesh (BBS [2009]). However, there are many problems has been continuing in education vis-à-vis EE. Author emphasis the following basic problems should solves immediately.

3.3.1. Contact Hours

Contact hours are an essential component of learning. Unfortunately, contact hours in Bangladesh average about half of the international standard. More than 90 percent schools are double shift, limited number of contact hours-daily school time of 120 minutes for grade one-two, and 240 minutes for grade three to five (**table 5**) . The annual contact time is fewer than 590 hours, one of the lowest in the world. In Japan, students spent 945 hours per year in elementary school. The current five years for completing primary education is an insufficient amount of time for students to obtain the requisite level of literacy, knowledge, abilities, attitudes and values for solving the problems of everyday life.

Table 5: Standard number of school hours a day in primary schools in Bangladesh

Grade	1 st (20min) 9:30-9:50	2 nd (50min) 9:50-10:40	3 rd (50min) 10:45-11:35	4 th (50min) 12:25-1:15	(30min) 1:15-1:45	5 th (40min) 1:45-2:25	6 th (40min) 2:25-3:05	7 th (35min) 3:05-3:40	8 th (35min) 3:40-4:15
I	English	Math	Bengali	Religion	No Class	No Class	No Class	No Class	No Class
II	English	Math	Bengali	Religion	No Class	No Class	No Class	No Class	No Class
III	English	Math	Bengali	Social Studies	Break	Social Science	Religion	Sentence/ Writing Practice	Music/Arts
IV	Bengali	English	Math	Social Studies	Break	Social Science	Religion	Sentence/ Writing Practice	Music/Arts
V	Math	Bengali	English	Social Studies	Break	Social Science	Religion	Sentence/ Writing Practice	Music/Arts

Sources: National Curriculum & Textbook Board Authority, <http://nctb.gov.bd/article.php?cat=2&subcat=58>
 Directorate of Primary Education, 2008 Annual Sector Performance Report (published in 2009)

3.1.2. Quality of the Teaching-Learning of Primary Education¹¹⁾

There is no substitute to education for the development of human resources which often starts in the classroom (M. Nurul I. Shekh Website). Recent studies on student's performance revealed low score in the achievement level which suggests the schools are not providing quality education (Greaney *et al.*, 1998; Chowdhury *et al.*, 2001; Hossain *et al.*, 2003). The quality of the teaching-learning process, the school environment and children's learning achievements are also major challenges. The evidence suggests that most of the students did not understand the subjects such as math, English and science when taught in the classroom in a satisfactory level. The students of Bangladesh were more or less able to read their textbooks except English. Some of the students, however, did not know the English alphabet well. This was the case mostly for the government primary school students but the situation was much better for non-governmental primary school students (M. Nurul I. Shekh Website). Poor qualifications and lack of teacher motivation are major challenges (UNICEF Bangladesh Website). Furthermore many teachers are not trained to teach environmental ethics based on the values of social and ecological sustainability.

The government took legal and administrative measures to implement the compulsory primary education Act and the whole country was brought under compulsory primary education program by 1993. A new series of text books and teachers guidebooks was prepared and introduced in phases from 1992 to 1996. A competency based and life skills oriented curriculum was developed in 1999 based on the 53 competencies introduced at the primary level in Bangladesh in 1992 (Latif, 2004:7). But all these steps are not enough unless teacher properly allow the instructions depicted in the teacher's guidebooks. As part of this policy thrust, a separate Ministry-level division, the Primary Mass Education Division (PMED) was established in 1992. The PMED has been uplifted into the Ministry of Primary and Mass Education (MOPME) in 2003.

The quality of education directly linked with teaching and learning process. Improvements in the quality thus depend on the nexus of teaching and learning. Teacher quality has a powerful influence on student achievement. The quality teaching depends on teacher status, recruitment, in-service and continuing training,

incentives for teachers, teacher's role and teacher quality, effective curriculum, education governance, management and school organization. Besides healthy, well nourished and motivated students, adequate facilities and learning materials, school environment, clear perception and assessment of learning outcomes, participatory governance and management, engaging local communities can improve leaning environment.

3.3.3. Teacher-Student Ratio

The teacher-student ratio is very high, with nearly one teacher for 70 students (UNICEF) in Bangladesh. This is because of a chronic shortage of teachers and school facilities. Poor qualification and a lack of motivation for teachers are crucial issues. In 2007 UNICEF Bangladesh has found the teacher- students ratios 1:80 to 1:100 in 69 *upazilas* and more that 1:100 in 23 *upzilas*. According to Directory of Primary Education, calculated from the school survey 2007, it found overall average students absenteeism of 20 percent, and average number of 63 students per classroom, and more that 90 percent of schools running on double shift.

There is also little chance for students to participate actively in the teaching-learning process. In Bangladesh, student-teacher ratio in the 1990s exceeded 60:1 (Chapman, 2002:18). In 2005, this ratio was decreased to 58:1 in Government Primary Schools and 46:1 in Registered Non-government Primary Schools (Baseline Survey, 2005:43). Narayanganj district has the highest pupil teacher ratio in both GPS (87:1) and RNGPS (83:1), and in Rangamati district it was the lowest (33:1) for both GPS and RNGPS. Government targets to achieve a student-teacher ratio of 46:1 in all schools by 2009. This clearly shows the requirement of recruitment of more teachers for GPS. (A F M Fazle Rabbi).

3.3.4. Teacher's salaries

Teacher's salaries are a perennial issue in Bangladesh as the salary rate is very low in both absolute and relative terms i.e. in comparison with other occupations of equivalent skills. The pay scales of the teachers of the GPS are the lowest among the government employees. The teachers of the RNGPS, community and other schools are paid much lower than government school teachers. Therefore the primary school teachers often lack motivation for their profession due to poor salary structure. Sometimes they take part-time jobs, including tutoring due to poor pay and poor chances of promotion. It is likely that these facts will make the serious teachers lose interest in the profession and try to find another job. This low working morale of the teachers does not seem to have improved after training, supervision, monitoring or other motivational activities. (A F M Fazle Rabbi).

3.3.5. Corruption of management

Corruption in the primary education sector is one of the underlying factors leading to the lack of quality basic education. Corruption in different levels and different capacities prevails in different ways in primary education. Lack of accountability and transparency mechanism in all levels of management spreads limitless corruption except few exceptions. Corruption in printing books, delay in supplying text books, forceful collection of subscriptions from teachers, transfer of teachers in exchange for money according to ones preference are now common practice (CPD, 2001:25). It has now become the norm rather than the exception.

Corruption has become a major roadblock in the development and advancement of the primary education system. It is a major cause for teachers losing their morale, confidence and principles (NDI, 2005:16). Notwithstanding the Government's commitments, flaws, irregularities and corruption continue to trouble many of programs regarding quality primary education (Action Aid Bangladesh, 2001:4).

4. Comparative Assessment

Environmental problems are different in country to country, and not same type of problems. It depends on social and culture conditions. EE also deals with ethics because sustainability challenges people's priorities, habits, beliefs and values. Therefore, it may require different type of solution, including education, technology. Japan suffered from all kinds of pollution like air pollution, water pollution because of the heavy industrialization at the expense of environment and hygiene. Yokkaichi asthma, Itai Itai (cadmium poisoning) disease, Minamata (mercury poisoning) disease from air and water pollution, are just a few well known examples. However, water is a crucial resource everywhere in the world. Bangladesh has faced difficulty in obtaining safe drinking water, constructing sewage system, installing treatment facilities of waste water from factories and suffering from arsenic poisoning. Poor rural people are dying of arsenic contamination in rural areas, whereas poor urban dwellers are exposed to heavy polluted air.

Since Japan has a lack of natural resources, as does Bangladesh, it is an idea that this is a good fit to improve the environmental problems, as it (Bangladesh) should endeavor to adopt several laws and education policies of the Japanese environmental preservation system. Both countries promote EE in schools through the integration of environmental values and issues across the subject board. In Japan a separate EE subject included in the school's curriculum for both primary and secondary education. Therefore, Bangladesh as mentioned before, EE is not taught as a single subject but is taught across the subject board and integrated in each subject. EE predominantly exists within the sciences and social studies, and there is a big difference between the two countries. In above discussion, the school system regards the teaching of environmental ethics as somewhat controversial. However, a field survey was collected in Bangladesh and Japan to find out real knowledge and practices on environment of elementary students from both countries.

4.1. Field Survey

The field survey on environmental problems in Bangladesh and Japan have been done (**table 6**). The questionnaires covering different areas of environment like general perception of environment, environment pollution, safe water, arsenic, sanitation practice, waste management and biodiversity. In Bangladesh¹²⁾, four hundred twenty, and one hundred fifty from Japanese¹³⁾ elementary students have interviews were conducted with both boys and girls in the same grade.

Table 6: The Primary Students Awareness for Environmental Issues in Japan and Bangladesh

Items	Elementary School in Bangladesh				Elementary School in Japan	
	BRAC	Government	Boys	Girls	Boys	Girls
Soil pollution	48.8	49.7	53.7	44.7	50.0	50.0
Air pollution	63.5	45.4	55.6	53.3	78.0	80.0
Water pollution	87.6	91.0	90.1	88.5	82.0	82.0
Protect Soil Erosion	64.4	68.8	68.8	64.4	40.0	42.0
Protect Air pollution	75.8	69.3	75.4	69.7	86.0	86.0
Protect Water pollution	65.1	66.4	63.7	67.8	90.0	90.0
Term of Arsenic	9.3	11.9	9.45	11.75	20.0	20.0
Effect of Arsenic Water	59.3	69.2	63.55	64.95	8.0	8.0
Awareness of Arsenic	45.45	53.05	48.0	50.5	12.0	20.0
Dumping Garbage	89.95	94.3	91.9	92.35	98.0	98.0
Useful of Kitchen Garbage	56.5	50.2	55.3	51.4	98.0	98.0
Recycle of Kitchen Garbage	44.0	31.7	39.25	36.45	99.0	99.0

Source: Elementary School in Japan, author collected from Kitakyusyu city, and Bangladesh part has taken from Lammia sharmin [2003] website.

The students of BRAC non-formal primary schools performed as well as those who have completed education from government primary schools although there is a difference between these two groups with regard to their socioeconomic background, curriculum, and teaching method. In Bangladesh students showed better awareness for safe water and safe sanitation practice compared to other environmental issues. Japanese students have excellent respond in dumping garbage, kitchen garbage, recycle. Some Japanese students have difficulties to understanding the meaning of arsenic, soil erosion. For that reasons the students respond only 12 to 20 percent, whereas in Bangladesh's students respond more than 50 percent (**table 6**).

The field survey shown that more emphasis should be put on Bangladesh's students sense of air and water pollution, garbage is resources, recycling of garbage, as well as on introducing student's on activities in EE classrooms. However, EE perspective on Bangladesh waste problems would be unlikely to produce a little contains of primary level, for such education do not address the causes of wate problems, do not raise awareness of the need to reduce waste and to recycle. They focus on 'out of sight out of mind' values (Lammia Sharmin [2003] Website).

4.2. Lessons Learned from Japanese Experience

Through the EE experience between the Japanese and Bangladesh people, many lessons can be learned. Since Japan has a lack of natural resources, as does Bangladesh, we feel that this is a good fit to improve the waste problems in country, as it should endeavor to adopt several elements of the Japanese style of EE and environmental practices. But the Japanese environmental practices cannot be, and should not be, applied in its entirety because of the differences in cultural and social activities. A number of lessons were learnt from Japan with respect to EE related problems like, government level policy, strategy, and development of plans and programs implementation. But it may be possible to implement the Japanese system partially, especially those

elements which have conformity with, awareness and Community Involvement, of learning environmentally friendly habits and waste separation and significance of educators in Bangladesh.

4.2.1. Building Awareness and Community Involvement

In the Japanese society believed, that school education is not enough to learn about environment problems. The social activities through the community participation in the process of volunteer activities are way to learn about environmental problems. Involving the community is an important and complex subject for successful community-based activities. People should be able to participate along side government officials and experts group as the direct stakeholders of these activities. While people should own the problems, consequences and challenges of any mitigation and preparedness initiative, it is necessary to take people's involvement further, into policy and strategy.

4.2.2. Learning of Environmentally Friendly Habits and Waste Separation

In the context of environment in Bangladesh it has been observed that there are many solid wastes that can be recycled or reused. It is very common to find that residences are throwing waste into the road side, markets places, stations, bus stops etc. without any hesitation. These immoral activities have become a burden on the environment in the country. Under these circumstances it is necessary to 'raise' moral development through education, and EE. Education plays a crucial role in the economic development of a country by meeting Human Resources Development (HRD) requirements and focusing on changing long established behavioral norms to free people from poverty and dependence on external agents for meeting their basic needs and no doubt to improve the environment in the country.(Chowdhury 2007: 61-111).

In Bangladesh, due to urban development, population growth, and increase of consumption, the volume of solid waste generation in all urban areas has been increasing every year. The household wastes have been carried out normally by the servants and often the by the housewives. The recovered materials in the households are: used papers, empty bottles, containers, old cloths, etc. These are sold to the street hawkers. Another recovery source is the scavenging operation carried out by slum children or waste pickers that are locally known as '*Tokai*'¹⁴⁾. They collect different items of paper waste from: houses, offices, shops, shopping centers, streets, and when municipal trucks unload waste in dropping areas. (Chowdhury 2007: 61-111).

The concept of waste separation and recycling has been successfully integrated into everyday life. One effective instrument of promoting an awareness for environmental responsibility is waste separation, a concept that is now applied on widespread basis throughout of Japan. Active confrontation with the problems of waste fosters an awareness for ecological issues. Waste separation is a first step to improving environmental behavior as it is a daily task that everyone accepts. It triggers a learning process that result in elementary students as well as other people being more attuned to their environmental behavior and it encourages them to take further measures to protect the environment. Waste separation activities¹⁵⁾ are an opportunity for primary to high school students to form environmentally friendly habits at an early age with activities that produce visible result in a short period of time. These activities can encourage to believe in their ability to contribute as well as promote an interest in participating in more complicated activities in the future beyond waste segregation.

Table 7: Japanese educational experience by reference to issues in basic education

Issues in Bangladesh	Japanese Educational Experience
Quantitative expansion - Expansion of access to education - Equality of educational opportunity	-Promotion of school enrollment and attendance in the Meiji era -Girls' education -Postwar policies for children in difficult circumstances -Education in isolated areas -Repeating a year and dropping out of school
Enhancing educational quality -Raising the quality of teachers -Improving educational content	-Curriculum -Lesson planning -Teacher education and training -Lesson study
Improving management -Improving educational administration and finance -Improving school management	-Educational administration -Educational finance -School management

Source: Compiled on the basis of information in JICA (2002). <http://www.jica.go.jp/english/publications>

4.2.3. The Significance of Educators

Educators play a vital role in the transition to sustainability. The teachers have demonstrated courage and commitment in their efforts to provide students with an education that contributes to shaping them into responsible environmental citizens. EE helps foster an understanding of how everyday decisions, lifestyle choices, and activities affect the finite resources of surroundings. One of the most important things is that school teacher should understand the basic environmental problems. They should be able to design the appropriate guideline in their schools, taking into account the actual circumstances of each school and each community. The teachers' willingness and confidence in their profession are crucial factors in improving the quality of education.

Japanese government initiative is to create a "resource recycling society" in which resources are more efficiently utilized through reuse and recycling. The Japanese are said to be a people fond of cleanliness and also are thought to do skillful and polite work. Japanese have the common mind of "*mottainai*" (Do not be wasteful). It has long been considered a virtue for us to concern ourselves foremost with reusing and recycling things in order to reduce waste as much as possible.

There are some problems that might be solved through the proper application of the law and legal system, and there is a need for specific, concrete programs to be initiated, although, the government has limited ability to achieve its full potential in this area due to the existence of some pertinent issues regarding plans, policies, and implications. However, in the context of Bangladesh, the problems are still not difficult like other developed and developing countries. They can be solved more quickly using environmental education and the proper recycle of all kind of solid wastes (Chowdhury 2005 : 67-86).

5. Conclusion

Environmental issues play an important role in school lessons, this will in turn have a positive effect on the elementary student's interest in and knowledge of the environment. During the past decade, Bangladesh has

progressed in improving the elementary education situation. The number of enrolled students increased from 12 million in 1990 to over 16 million in 2008, and net enrolment rate was boosted from 60 percent in 1990 to 90.8 percent in 2008. Although Bangladesh has experienced quantitative educational improvement the qualitative aspects of education as well as EE have become a cause of government concern. Steps have been taken to address educational quality and it is in this larger context that curriculum has come to play a crucial role. The quality of education must be enhanced as it lays the foundation for producing high quality teachers.

Bangladesh could launch a fresh start by taking lessons from Japan by studying the way Japanese EE use the application of pollution prevention measure, waste disposal system. It is my belief that, if Bangladesh designs its system from the experiences of the Japanese EE a favorable situation will emerge in the long run which will help it avoid problems which Japan faced at its early stage of development. Bangladesh government has taken various measures to educate its population in recognition of the potentials of education for its nation. Since 1990s, Bangladesh government has recognized education as one of the top priority areas. Despite various efforts, the quality of education is deteriorating and the current trend of deterioration should be dealt with if cognitive development of the students is to be assured.

Notes

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- 1) The new national curriculum standard will be put into effect from 2000 in kindergartens, 2002 in primary and junior high schools, and in 2003 at senior high school. The National Curriculum Standards for elementary school has four chapters, namely, Chapter 1 General guidelines; Chapter 2 Teaching Subjects; Japanese language, Social Studies, Mathematics, Science, Life Environment Studies, Music, Drawing and Handicraft, Homemaking, Physical Education, Chapter 3 Moral Education; Chapter 4 Special Activities. The structure of teaching subjects in elementary school has been almost the same since the first grade. “Life environment studies” is a new subject introduced first in the present Standards by combining social studies and science, which are taught in the first and the second grades. (UNESCO statistical yearbook, 1999)
- 2) At the tertiary level, universities are regulated by the University Grants Commission. The colleges providing tertiary education are under the National University. Each of the medical colleges is affiliated with a public university. Universities in Bangladesh are autonomous bodies administered by statutory bodies such as Syndicate, Senate, Academic Council, etc. in accordance with provisions laid down in their respective acts.

http://en.wikipedia.org/wiki/Education_in_Bangladesh)

- 3) The primary and secondary levels of education are controlled by the General Education Boards, each covering a region. The boards' headquarters are located in Barisal, Comilla Chittagong, Dhaka, Jessore, Rajshahi and Sylhet. In addition, the *Madrasah* Education Board covers religious education in government-registered *Madrasahs*, and the Technical Education Board controls technical and vocational training in the secondary level.
- 4) The first education commissions was Dr. Qudrat-e-Khuda in 1972.
- 5) Literacy is the ability to read, write, speak and listen in meaningful and socially acceptable ways. One who is able to do that is literate and those who can't are illiterate. According to Bangladesh Bureau of Statistics (BBS) survey in 2011, between the year 2005 and 2010, the literacy growth rate was 5.55 percent, if the these trend continues the country will be attain 95 percent literacy by 2020. (Financial Express, Website).
- 6) There are 10 types of schools include: Government Primary Schools (GPS, Registered Non-Government Primary Schools (RNGPS), Experimental Schools, community Schools, Non- Registered Non Governmental Primary Schools, Kindergarten, NGO Schools, Primary sections of Secondary Schools, *Ebtedayee Madrasahs*, *Primary sections of Dakhil, Alim, Fazil* and Kamil Madrasahs.
- 7) Although it only represents a small proportion of overall spending on education, nearly 90% of households make some kind of payment directly to schools. Some 80-93% of the total private expenditure incurred is on private tuition, stationery, fuel, tiffin (mid-day snacks), health care, and school dress. Private tuition makes up the largest portion of private expenditure with an estimated 43% of GPS students and 37-30 percent in other types of institutions taking part. [CAMPE 2006 Financing Primary and Secondary Education in Bangladesh]
- 8) The *Upazila System* is the Second tire of the local Government of Bangladesh. This system is the successor of the previous sub-division or *Thana*. It has been created as a local administration under the decentralization program of the Government.
- 9) *Ebtedayee* refers to the level of *madrasah* system offering education equivalent to the primary level of general education. It offers both religious and general education instructions to Muslim students.
- 10) Among the numerous national NGOs engaged in non-formal environmental education in Bangladesh is the Bangladesh *Poribesh Unnayan Sangstha* (Bangladesh Environment Development Organization or POUSH). POUSH launched a nature awareness program in its 50 non-formal primary schools (Saeed et al, 1998). The program produced books for students, resources and training for teachers and guidelines for nature walks, visits to zoos and botanical gardens. Primary school teachers advised on the curriculum design and in turn use the materials published by the POUSH in primary schools run by the government.
- 11) Providing a definition of education is very difficult and complex. According to UNESCO (1991), the definition of education is the following: "Education is taken to comprise organized and sustained communication designed to bring about learning".
- 12) In Bangladesh the field survey had done by BRAC (large scale NGO) Researcher Lammia Sharmin. Data were collected from Tangail district (six *upazilas* and sixteen unions) during July-August 2002 through structured questionnaire.

- 13) The field survey in Japan, author collected from Kitakyushu City in June to July 2011.
- 14) The government estimates that approximately 6.6 million children between the ages of 5 and 14 years work. Working children were found engaged in 200 different types of activities, of which 49 were regarded as harmful to children's physical and mental well being. For the purposes of this survey, Street Children refers to those children aged 5-17 years who are living (i.e. sleeping, eating and working) on the street of a particular city, town or thana head quarters. These children are floating in nature and they may live in one place for some time and then move to other places. They are detached from their family or parents. They usually sleep at night on the roadside, railway stations, bus stations, park, and abandoned houses and public places. These distressed children are primarily seen in the big cities. Tokai is a popular Bengali term used for child waste pickers: A child who moves around the town to pick up various used items like papers, bottles, shoes, cloths, etc.cited at BBS (2003), *Population Census 2001*.
- 15) Author also involved with a local community, (400 household) and participate with wife and son (elementary student) in the waste separation of waste like papers, old books, magazines, board. Yearly collected more than 16,000 kg , more than yen 220,000.

Sources from websites

Japan Environmental Education <<http://www.jeef.or.jp/english>>

Ministry of Environment Japan, <<http://www.env.go.jp/en/index.html>>

Abdullah Al Masum et.al. "Environmental Education in Bangladesh with Special Reference to Higher Studies (1992-2009)" www.intconfhighered.org/Al-Masum%20article.doc access, 15 th March, 2011.

Bangladesh Bureau of Education Information and Statistics. (n.d.). Primary Education Statistics.

Retrieved April 25, 2008, from http://www.banbeis.gov.bd/db_bb/primary_education_1.html

"Japanese Education and Literacy" http://www.asianinfo.org/asianinfo/japan/education_literacy.htm

Lammia Sharmin (2003) "Assessment of Environmental Awareness of the Students with Primary Education", Research and Evaluation Division, BRAC, Dhaka.

http://www.bracresearch.org/reports/assessment_of_environment_awareness_of_students_with_primary_education_pdf.pdf

A F M Fazle Rabbi "Primary Education in Bangladesh: Viability of Achieving Millennium Development Goals" ["http://www.igs-bracu.ac.bd/UserFiles/File/archive_file/Working%20paper.pdf"](http://www.igs-bracu.ac.bd/UserFiles/File/archive_file/Working%20paper.pdf)

Directorate of Primary Education Ministry of Primary and Mass Education (GOB) (2008) *School Survey Report 2007 of Second Primary Education Development Programme (PEDP-II)* <http://www.dpe.gov.bd/>

M. Nurul I. Shekh "The State of Primary Educational Quality in Bangladesh: An Evaluation". <http://www.netreed.uio.no/conferences/conf2005/Nurul%20Shekh.pdf>

Japan International Cooperation Agency (JICA) <http://www.jica.go.jp/>

References

- Ahmed, Feroze (ed.), (2000) *Bangladesh Environment 2000: A Compilation of Papers Presented at the International Conference on Bangladesh Environment (ICBEN) 2000*, held in Dhaka on January 14-15, 2000, published by *Bangladesh Poribesh Andolon (BAPA)*, Dhaka .
- Bangladesh Centre for Advanced Studies (1999) “Guide to the environmental Conservation Act 1995, And Rules 1997” *Bangladesh Centre for Advanced Studies*, Dhaka, Bangladesh.
- Baseline Survey (2005) *Baseline report of second primary education development program (PEDP-II)* Directorate of Primary Education, Ministry of Primary and Mass Education, Bangladesh.
- CPD (2001) *Policy brief on education policy CPD Task force Report. Draft Report. Election 2000: National Policy Forum*, Dhaka.
- Chowdhury Mahbubul Alam (2007) “The Recycling Establishment and Their Plans, Policies and Implementation— A case study on Wastes Paper in Chittagong City —” *Journal of Law and Political Science*, Vol.34, No. 3,4, The Law Association of The University of Kitakyushu, March, pp. 61-111.
- (2005) “Education for the Empowerment of Women in Bangladesh” *Journal of Asian Women’s Studies*, Vol.14, Kitakyushu Forum on Asian women, pp. 67-86.
- (2003) “Environmental Issues in China: Adoption of Japanese Experience, (Japanese)” *ICSEAD, Higashi Ajia he no Shotten*, Vol.14, No. 4, September , pp. 43-60.
- Chowdhury, A. M. R., Chowdhury, R. K., Nath, S. R., Ahmed, M., and Alam, M. (2001) *A Question of Quality: State of Primary Education in Bangladesh*, Dhaka: The University Press Limited.
- CFSD (2001) *Bangladesh Environment Outlook 2001*, Centre for Sustainable Development, Bangladesh.
- Government of Bangladesh, *Statistical Yearbook of Bangladesh*. Various Issues.
- GOB (2009) *National Education Policy*, (Draft), Bangladesh Government.
- Government of Japan, Ministry of the Environment, *Annual Report*. Various Issues.
- Graeaney, V., Khandker, S. R., and Alam. M. (1998) *Assessing Basic Learning Skills*, The World Bank, Dhaka: The University Press Limited.
- Hossain, A., Imam, S. R., Amin, M. N., Rahman, T., and Gosh, S. K. (2003) *Classroom Situation at Primary Level*, BRAC Research and Evaluation Division, Dhaka: Bangladesh.
- Japan International Cooperation Agency (JICA) (2004) *The History of Japan’s Educational Development What implications can be drawn for developing countries today*, JICA, Japan.
- NEMAP (1995) *National Environment Management Action Plan (NEMAP)*, Volume Ia (Summary) & II (Main Report), Ministry of Environment and Forest, Government of the People’s Republic of Bangladesh.
- Khondaker Mizanur Rahman, Chowdhury Mahbubul Alam, Rahman Taslima (2003) “Environmental Issues in Bangladesh: A Non-Expert Assessment and Suggestion for Solution” *Journal of Culture in our Time, Institute for Alternative System of Social Welfare and Development*, Nihon Fukushi University, Japan, pp. 1- 14.
- Latif, S. (2004) *Improvements in the quality of primary education in Bangladesh 1990-2002 Education for All Global Monitoring Report 2005*. UNESCO, Dhaka, Bangladesh.
- Mohammad, Noor (2009) “Environmental Law in Higher Education of Bangladesh and Malaysia: An Approach for Sustainability” Paper presented at 3rd International Conference on Higher Education for Sustainable

- Development, 20-22 November, 2009 held at University Sains Malaysia, Penang, Malaysia.
- Md. Salequzzaman and J.K.Davis (2003) “Environmental Education and Environmental Management in Bangladesh and their Sustainability”, ISEIS - International Society for Environmental Information Sciences, *Environmental Informatics Archives, Volume 1* , pp. 70-82.
- NAPA (2009) *National Adaptation Programme of Action (NAPA)*, prepared by Ministry of Environment and Forest, Bangladesh, Dhaka.
- NDI,(2005)“Study circle discussion guide primary education: educational environment and management” . *National Democratic Institute for International Affairs, Dhaka.*
- Rahman A.A. and Mallick D.(2001) “Environmental Issues Facing Rural Development in Bangladesh”, *Bangladesh Centre for Advanced Studies, Dhaka, Bangladesh.*
- Sharafiuddin A.M. and A. Atiq Rahman (1994) *Environmental Education and Awareness, Environment and Development in Bangladesh* , (Part-1) University Press Limited, Dhaka , Bangladesh.
- Sharafuddin A.M. (1990) “Towards Sustainable Development: Environmental Awareness and Education in Bangladesh”. *National Conservation Strategy of Bangladesh*, Ministry of Environment and Forest, Bangladesh.
- UNESCO(2009)*EFA Global Monitoring Report*, Paris.

